

## **REMARKS**

Claims 51-53 have been amended and claims 54-56 have been canceled. Claims 1-3, 6, 8, 11, 13, 20, 22, 23, 26, 27, 30, 31, 36, 37, 45 and 48-53 remain in the application and stand allowed. Reconsideration of the application in view of the amendments and the remarks to follow is requested.

The Examiner indicates that the claims are subject to a restriction requirement between:

Group I, claims 1-3, 6, 8, 11, 13, 20, 22, 23, 26, 27, 30, 31, 36, 37, 45, and 48-52; and

Group II, claims 54-56.

Applicants elect the claims of Group I without traverse and have canceled the claims of Group II. Noting that the listings of claims on the Summary and in the body of the Action are inconsistent with one another as well as with the claims presently pending, Applicants assume that the Examiner had intended to include claim 53 in the claims of Group I. Applicants also assume that the omission of claim 3 from the list of allowed claims in the Summary is an inadvertent typographical error and that claim 3 stands allowed.

Claims 51-53 have been amended to address the concerns noted in the Office Action and to clarify the language of the claims, however these amendments do not alter the scope of the claims. The comments on p. 3 directed to the occurrence of "pad" in line 7 of claim 51 are not understood because the word "pad", without pluralization, does not appear in any of

claims 51-53. Noting that the reference to "their associated" in line 7 of claim 51 is ambiguous due to multiple occurrences of this phrase in this line, Applicants have amended these in a mutually consistent fashion believed to be in conformance with the ideas expressed in the Office Action. Applicants believe that the concerns noted with respect to formal matters have been addressed and in the alternative, clarification is requested.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page(s) are captioned "**Version with markings to show changes made.**"

In view of the foregoing, allowance of the application is requested. The Examiner is requested to phone the undersigned in the event that the next Office Action is one other than a Notice of Allowance. The undersigned is available for telephone consultation at any time during normal business hours (Pacific Time Zone).

Respectfully submitted,

Dated: \_\_\_\_\_

Aug. 19, 2002

By: \_\_\_\_\_



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**Version with markings to show changes made**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Application Serial No. .... 09/148,723  
Filing Date ..... September 3, 1998  
Inventor ..... Warren M. Farnworth et al.  
Assignee ..... Micron Technology, Inc.  
Group Art Unit ..... 3729  
Examiner ..... D. Tugbang  
Attorney's Docket No. .... MI22-981  
Title: Methods of Bonding Solder Balls to Bond Pads on a Substrate

**37 CFR §1.121(b)(1)(iii) AND 37 CFR §1.121(c)(1)(ii)**  
**FILING REQUIREMENTS TO ACCOMPANY RESPONSE TO JUNE 18,**  
**2002 EX PARTE QUAYLE OFFICE ACTION**

Deletions are bracketed, additions are underlined.

**In the Claims**

51. (Amended) A fluxless process for bonding balls of solder to bond pads on a substrate comprising:

placing at least portions of a plurality of balls of solder within a frame and in registered alignment with individual bond pads over the substrate by dipping the substrate into a volume of the balls of solder; and

while the ball portions are within the frame, laser bonding the balls with [their associated] the individual bond pads by laser bonding the balls of solder to [their associated] the individual bond pads using a fixed laser beam.

52. (Amended) The [method] fluxless process of claim 51, wherein laser bonding the balls to their associated bond pads comprises fixing the position of [a] the laser beam and moving the frame relative to the laser beam from ball-to-ball.

53. (Amended) The [method] fluxless process of claim 51, wherein:  
placing comprises placing individual balls of solder within individual holes within the frame; and

laser bonding the balls to [their associated] the individual bond pads comprises reflowing the balls by laser bonding while the balls are within [their] individual holes, and further comprising, after reflowing, removing the frame from around the reflowed balls.

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Claims ~~54-56~~ have been canceled without prejudice.

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